



Item ID:	D3391-013		Accept			Setup	Start						
Revision ID:													
Item Name:	Mid Tube Assembly												
Start Date:	4/6/2010	Start Qty:	1.00			Cust Item ID:							
Required Date:	4/20/2010	Req'd Qty:	1.00			Customer:							
Reference:													
Approvals:	Process Plan:	<i>MF</i>	Date:	10-4-6	Tooling:			Date:		Run	Start		
	QC:		Date:		SPC (Y/N):			Date:		Stop			

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Draw Number	Draw Rev.	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	----------------	--------------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D3391	Rev H

100	0.00								
-----	------	--	--	--	--	--	--	--	--

Skidtubes									
-----------	--	--	--	--	--	--	--	--	--

Skidtubes	Memo	0.00							
-----------	------	------	--	--	--	--	--	--	--

Skidtubes	1-Cut tube to finish length as per Dwg D3391								
-----------	--	--	--	--	--	--	--	--	--

Skidtubes	2-Identify as D3391-013								
-----------	-------------------------	--	--	--	--	--	--	--	--

Skidtubes	3-Drill pilot holes using DT8796 (including "B" holes) and drill only 1 fwd saddle hole on one side only as per Dwg D3391								
-----------	---	--	--	--	--	--	--	--	--

Skidtubes	4-Open saddles and GHW holes to Ø0.375" except for fwd saddle hole of detail "J"								
-----------	--	--	--	--	--	--	--	--	--

Skidtubes	5-Remove .030" from Fwd indexing Ridge as per Dwg D3391								
-----------	---	--	--	--	--	--	--	--	--

Skidtubes	6-Remove indexing ridge on Fwd & Aft end of skidtube as per Dwg D3391								
-----------	---	--	--	--	--	--	--	--	--

Skidtubes	7-Deburr								
-----------	----------	--	--	--	--	--	--	--	--

Skidtubes	8-Drill #30 pilot holes using wearplate Jig DT8217 Identify Ø0.250" holes with paint marker,								
-----------	--	--	--	--	--	--	--	--	--

Skidtubes	9-Open wearplate holes of D3391-013 assembly detail section G-G to Ø0.250" (14 holes) as per Dwg D3391 and 2 holes in section Detail "J", do not open wearplate holes of section "J"								
-----------	--	--	--	--	--	--	--	--	--

Skidtubes	10-Open wearplate holes of D3391-013 assembly detail section H-H to Ø0.297" (20 holes) as per Dwg D3391								
-----------	---	--	--	--	--	--	--	--	--

10/4/6

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief.Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 57351

Tuesday, April 06, 2010 8:23:05 AM



Page 2

Item ID: D3391-013

Accept



Setup Start



Revision ID:

Item Name: Mid Tube Assembly

Stop



Start Date: 4/6/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 4/20/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

11-Open .375" holes to .438" ***do not open fwd saddle holes***

4/01/416

12- Locate electric step holes 41.5000" from fwd end and drill using DT 8393

13-Locate D3391-021 in D3391-023 at 9.00" (see view z-z)

14- Transfer drill one fwd saddle hole only to .188" dia, transfer drill all remaining fwd saddle holes using DT 8149 locating from previously drill .188" dia hole, using t-pins and clicos to ensure perfect allignment, open up previously transfer drilled pilot holes in D3391-013/-011 to 0.438" dia. in D3391-011

4/01/412

15- Transfer drill 2 wearplate holes into D3391-011 using DT8217, locating from two previously drilled holes, drill remaining wearplate holes into D3391-011.

16- Locating from two fwd wearplate holes drill remaining 6 wearplate holes in D3391-011 using DT8937

17- Open 2 fwd wearplate holes in D3391-013 to .250" dia.

18- counterbore two aft wearplate holes in D3391-011 as per dwg

19- Open 12 wearplate holes in D3391-011 to 0.297" dia.

20- Deburr and blow out all chips from inside tube

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr.	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 57351

Page 3

Tuesday, April 06, 2010 8:23:05 AM

Item ID: D3391-013

Accept



Setup Start



Revision ID:

Item Name: Mid Tube Assembly

Stop



Start Date: 4/6/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 4/20/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

110

QC5- Inspect part completeness to step on W/O

0.00

S 10/4/13

0.00



QC

Quality Control

Memo

120

Chemical Conversion Coat per QSI005 4.1

0.00

0.00



HandFinish

Hand Finishing

Memo

130

QC3- Inspect Part Finish

0.00

0.00



QC

Quality Control

Memo

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 57351

Page 4

Tuesday, April 06, 2010 8:23:05 AM

Item ID: D3391-013

Accept



Setup Start



Revision ID:

Item Name: Mid Tube Assembly

Stop



Start Date: 4/6/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 4/20/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

140



Skidtubes

0.00

10/04/15

Skidtubes

Memo

0.00

Bond web in place as per Dwg D3391 & QSI 015.
*****Ensure Web Alignment *****

B# 112429

Exp 018130

150



QC

QC5- Inspect part completeness to step on W/O

0.00

8/10/04/15

Quality Control

Memo

0.00

Inspect each insert using DT8821

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID: 57351

Tuesday, April 06, 2010 8:23:05 AM



Page 5

Item ID: D3391-013

Accept



Setup Start



Revision ID:

Item Name: Mid Tube Assembly

Stop



Start Date: 4/6/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 4/20/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Draw
Number

Draw
Rev.

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

160



Skidtubes

Memo

0.00

A/R M112860

BE 10/05/04

Skidtubes

1-Weld crossbolt spacer as per dwg D3391 & QSI 004

2-grind weld flush

BE 10/05/04

3- Transfer drill electric step pilot holes only from D3391-013 into D3391-015

4- Open electric step holes 0.391"per dwg D3391 (section L-L)

5- Open electric step holes 0.297"per dwg D3391 (section M-M)

6- Open electric step holes 0.250" per dwg D3391 (section LL-LL)

170



QC
Quality Control

QC10- Inspect visual per QSI004- ground welds

0.00

S. W. Stora

0.00

11-4-26

XL

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 57351

Page 6

Tuesday, April 06, 2010 8:23:05 AM

Item ID: D3391-013

Accept



Setup Start



Revision ID:

Item Name: Mid Tube Assembly

Stop



Start Date: 4/6/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 4/20/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

180

QC5- Inspect part completeness to step on W/O

0.00

0.00

8/11/09



QC

Quality Control

190

White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum

0.00



Powdercoat

Powder Coating

M116964

Memo

0.00

Use paint screws to mask inserts
 START TIME: 8:00
 OVEN TEMPERATURE: 320°F
 FINISH TIME: 8:30

① Ø M 11/05/10

200

QC3- Inspect Part Finish

0.00



QC

Quality Control

Memo

0.00

1 d M 11/05/10

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 57351

Page 7

Tuesday, April 06, 2010 8:23:05 AM

Item ID: D3391-013

Accept



Setup Start



Revision ID:

Item Name: Mid Tube Assembly

Stop



Start Date: 4/6/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 4/20/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

210



Skidtubes

0.00

1 of 1005/10

Skidtubes

Skidtubes

Memo

0.00

1- insert D3391-011 into D3391-13

2- insert T-pins into first and third fwd saddle holes

3- ON FIRST SIDE ONLY drill out 2nd and forth fwd saddles holes to 0.500" as per DSI 9364

4- remove T-pins and locate DT9415 from first and third crossbolt hole using T-pins and clekos

5- ON 2ND SIDE ONLY ream out 2nd and forth saddle hole to 0.499". Remove DT9415

6- deburr, re-alodine and blow out chips

7- press fit D3591-1 spacers using DT9416 starting from 0.500" side

220



QC5- Inspect part completeness to step on W/O

0.00

S. Moshu

0.00

QC

Quality Control

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 57351

Page 8

Tuesday, April 06, 2010 8:23:05 AM

Item ID: D3391-013

Accept



Setup Start



Revision ID:

Item Name: Mid Tube Assembly

Stop



Start Date: 4/6/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 4/20/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

230



HandFinishing

0.00

HandFinish

Memo

0.00

Hand Finishing

Install inserts

1 6 10510

240



QC5- Inspect part completeness to step on W/O

0.00

8 uloslu

QC

Quality Control

Memo

0.00

Inspect thread of each insert using DT8821

250



HandFinishing

0.00

HandFinish

Memo

0.00

Hand Finishing

Assemble as per dwg D3391

1 6 10510

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Work Order ID 57351

Page 9

Tuesday, April 06, 2010 8:23:05 AM

Item ID: D3391-013

Accept



Setup Start



Revision ID:

Item Name: Mid Tube Assembly

Stop



Start Date: 4/6/2010 Start Qty: 1.00



Cust Item ID:

Required Date: 4/20/2010 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run HoursDraw
NumberDraw
Rev.Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

260

QC5- Inspect part completeness to step on W/O

0.00

8 4/05/10

0.00



QC

Memo

Quality Control

270

Identify as per dwg & Stock Location: 6010

0.00

0412-742-041 / B68635

0.00



Packaging

Memo

Packaging

280

QC21- Final Inspection - Work Order Release

0.00

0.00



QC

Memo

Quality Control

1 6 4/05/10

11/15/11

MF

11-05-11

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Tuesday, April 06, 2010 8:23:04 AM

Page 1

Work Order ID: 57351



Parent Item: D3391-013



Parent Item Name: Mid Tube Assembly

Start Date: 4/6/2010

Required Date: 4/20/2010

Comments: IPP A 05.12.13 New Issue EC

Start Qty: 1.00

IPP B 06.02.09 Dwg rev.D EC

IPP Rev:06-03-28 Update Manufacturing Instructions JLM

IPP rev D 07.03.14 dwg Rev F EC

Required Qty: 1.00

✓ AN960C10L



washer

Purchased No

NAS1144C0332R | M11724

Each

0.0000

4.0000



(x1) sel 10510

✓ D3672-1



Manufactured No

Each

1,589.000

10.0000



sel 10510

Phenolic Washer

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
------------------	----------------	-----------------

Main Warehouse

ST077	1589	
47628	89	
51674	500	
52505	1000	

X10

✓ D2500-1-100



Manufactured No

100 Each

122.0000



Skidtube Extrusion

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
------------------	----------------	-----------------

Main Warehouse

LG	122	
37065	35	
50251	87	

1 1014113

D 3681-1 857656

x12

BE10/05/04

10.05.04

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 2

Tuesday, April 06, 2010 8:23:04 AM

Work Order ID: 57351



Parent Item: D3391-013



Parent Item Name: Mid Tube Assembly

Start Date: 4/6/2010

Required Date: 4/20/2010

Comments: IPP A□05.12.13□New Issue□EC

Start Qty: 1.00

Required Qty: 1.00

IPP B□06.02.09□Dwg rev.D EC

IPP Rev:06-03-28 Update Manufacturing Instructions JLM□□

IPP rev D 07.03.14 dwg Rev F EC

✓ MS27039C4-08

Purchased

No

100

Each

60.0000

4.0000



HL u10510

SCREW

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
------------------	----------------	-----------------

Location

Main Warehouse

ST293

60

Y4

17831

60

✓ D3391-011

Manufactured

No

140

Each

0.0000

1.0000



B56724 ① 4/6/12

Fwd Tube Assembly

✓ D3391-015

Manufactured

No

160

Each

0.0000

1.0000



① RD HL u10510

Aft Tube Assembly

✓ D3389-1

Manufactured

No

210

Each

2.0000

1.0000



(K) M u10510

Web

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
------------------	----------------	-----------------

Location

Main Warehouse

LG

2

56813

2

B57353 ① 4/6/15

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Tuesday, April 06, 2010 8:23:04 AM

Page 3

Work Order ID: 57351



Parent Item: D3391-013



Parent Item Name: Mid Tube Assembly

Start Date: 4/6/2010

Required Date: 4/20/2010

Comments: IPP A□05.12.13□New Issue□EC

Start Qty: 1.00

Required Qty: 1.00

IPP B□06.02.09□Dwg rev.D EC

IPP Rev:06-03-28 Update Manufacturing Instructions JLM□□

IPP rev D 07.03.14 dwg Rev F EC

✓ ALS4-1032-225

Purchased

No

230

Each

7,729.000 10.0000



Insert

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
------------------	----------------	-----------------

Location

Main Warehouse

PK011

7729

110768

7729

JK
on w/b 56724

✓ ALS4-428-165

Purchased

No

230

Each

143.0000 4.0000



Inserts

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
------------------	----------------	-----------------

Location

Main Warehouse

FP

43

6989

43

Main Warehouse

ST282

100

114172

100

JK in los 10

✓ D3591-1

Manufactured

No

230

Each

5.0000 2.0000



Bushing

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
------------------	----------------	-----------------

Location

Main Warehouse

ST072

5

357350

47121

5

on w/b x2 56724

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 4

Tuesday, April 06, 2010 8:23:04 AM

Work Order ID: 57351



Parent Item: D3391-013



Parent Item Name: Mid Tube Assembly

Start Date: 4/6/2010

Required Date: 4/20/2010

Comments: IPP A 05.12.13 New Issue EC

Start Qty: 1.00

Required Qty: 1.00

IPP B 06.02.09 Dwg rev.D EC

IPP Rev:06-03-28 Update Manufacturing Instructions JLM

IPP rev D 07.03.14 dwg Rev F EC

✓ ALS4-1032-130



Insert

Purchased No

250 Each 40.0000 26.0000



✓ u105110

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
------------------	----------------	-----------------

Location

Main Warehouse

ST282

40

110511

40

✓ u1117331

✓ 26

✓ AN3C4A



BOLT

Purchased No

250 Each 1,249.000 10.0000



✓ u1110510

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
------------------	----------------	-----------------

Location

Main Warehouse

ST350

1249

113226

248

114103

501

114108

500

✓ u1117313

✓ 10

✓ AN960C10L



washer

Purchased No

250 Each 0.0000 10.0000



✓ u1110516

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 5

Tuesday, April 06, 2010 8:23:04 AM

Work Order ID: 57351



Parent Item: D3391-013



Parent Item Name: Mid Tube Assembly

Start Date: 4/6/2010

Required Date: 4/20/2010

Comments: IPP A 05.12.13 New Issue EC

Start Qty: 1.00

Required Qty: 1.00

IPP B 06.02.09 Dwg rev.D EC

IPP Rev:06-03-28 Update Manufacturing Instructions JLM

IPP rev D 07.03.14 dwg Rev F EC

✓ AN960C416L

Purchased No

250

Each

1,280.000 4.0000



WASHER NAS 1149C0 432R

44 ulos 10

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
------------------	----------------	-----------------

Location

OFFSHORE

FG

44

11116900

44

104925

44

Main Warehouse

ST346

1236

112612

336

112794

500

112828

400

✓ D3401-041

Manufactured No

250

Each

25.0000 1.0000



Tow Cap Assembly

44 ulos 10

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
------------------	----------------	-----------------

Location

Main Warehouse

FP

25

N/A

36216

1

41931

2

46029

12

50316

10

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 6

Tuesday, April 06, 2010 8:23:04 AM

Work Order ID: 57351



Parent Item: D3391-013



Parent Item Name: Mid Tube Assembly

Start Date: 4/6/2010

Required Date: 4/20/2010

Comments:

IPP A 05.12.13 New Issue EC
IPP B 06.02.09 Dwg rev.D EC
IPP Rev:06-03-28 Update Manufacturing Instructions JLM
IPP rev D 07.03.14 dwg Rev F EC

Start Qty: 1.00

Required Qty: 1.00

✓ D3564-13

Manufactured No

250

Each

27.0000

1.0000



40 10510

Wearshoe

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
------------------	----------------	-----------------

Location

Main Warehouse

FP

9

1366136

x1

56285

9

Main Warehouse

FP17

18

56533

18

✓ D3566-13

Manufactured No

250

Each

58.0000



31 10510

Gasket

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
------------------	----------------	-----------------

Location

Main Warehouse

FP

58

1366550

x1

53461

58

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Picklist Print

Page 7

Tuesday, April 06, 2010 8:23:04 AM

Work Order ID: 57351



Parent Item: D3391-013



Parent Item Name: Mid Tube Assembly

Start Date: 4/6/2010

Required Date: 4/20/2010

Comments: IPP A□05.12.13□New Issue□EC

Start Qty: 1.00

Required Qty: 1.00

IPP B□06.02.09□Dwg rev.D EC

IPP Rev:06-03-28 Update Manufacturing Instructions JLM□□

IPP rev D 07.03.14 dwg Rev F EC

✓ D3672-1

Manufactured No

250

Each

1,589.000 4.0000



✓ u10510

Phenolic Washer

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
------------------	----------------	-----------------

Location

Main Warehouse

ST077	1589	
47628	89	
51674	500	
<u>52505</u>	1000	

✓ D3672-3

Manufactured No

250

Each

514.0000 4.0000



✓ u10510

Phenolic Washer

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
------------------	----------------	-----------------

Location

Main Warehouse

ST077	514	<u>B64176</u>
51596	6	
55560	508	

✓ MS27039C1-09

Purchased No

250

Each

66.0000 4.0000



✓ u10510

SCREW

<u>Warehouse</u>	<u>Loc Qty</u>	<u>Loc Code</u>
------------------	----------------	-----------------

Location

Main Warehouse

ST293	66	
<u>17831</u>	66	

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD	AT9612	Work Order:	B57351
Description: Tri-beam Bellshoe stop leg		Part Number:	03391-013
Inspection Dwg: 3391-013 Rev: H			Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

X First Article Prototype

Measured by:	<u>U</u>	Audited by:	<u>U</u>	Prototype Approval:	N/A
Date:	10/4/13	Date:	10-4-13	Date:	N/A

Rev	Date	Change	Revised by	Approved
A		New Issue	KJ/JLM	

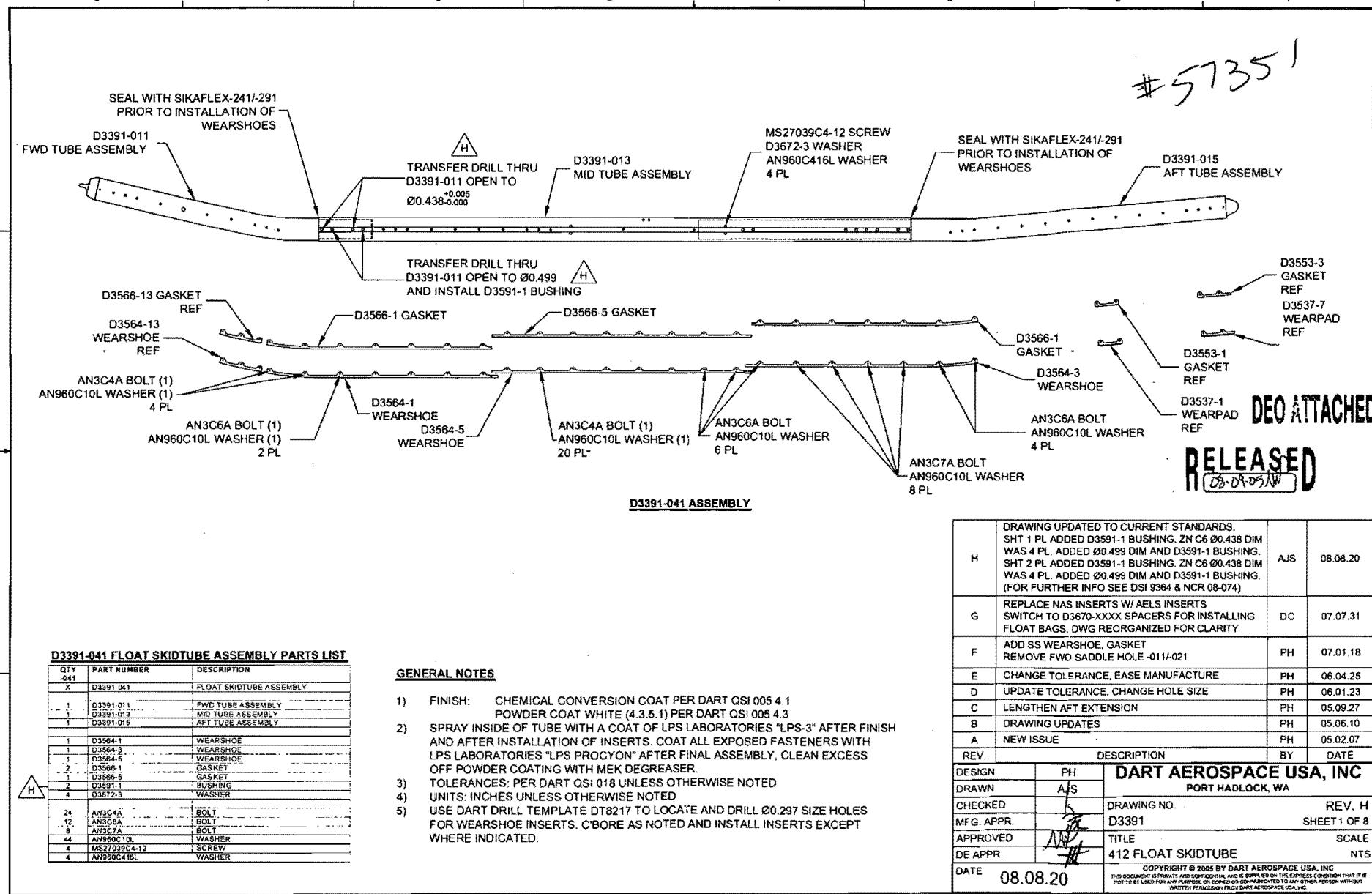
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

8 7 6 5 4 3 2 1



8 7 6 5 4 3 2 1

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE		By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

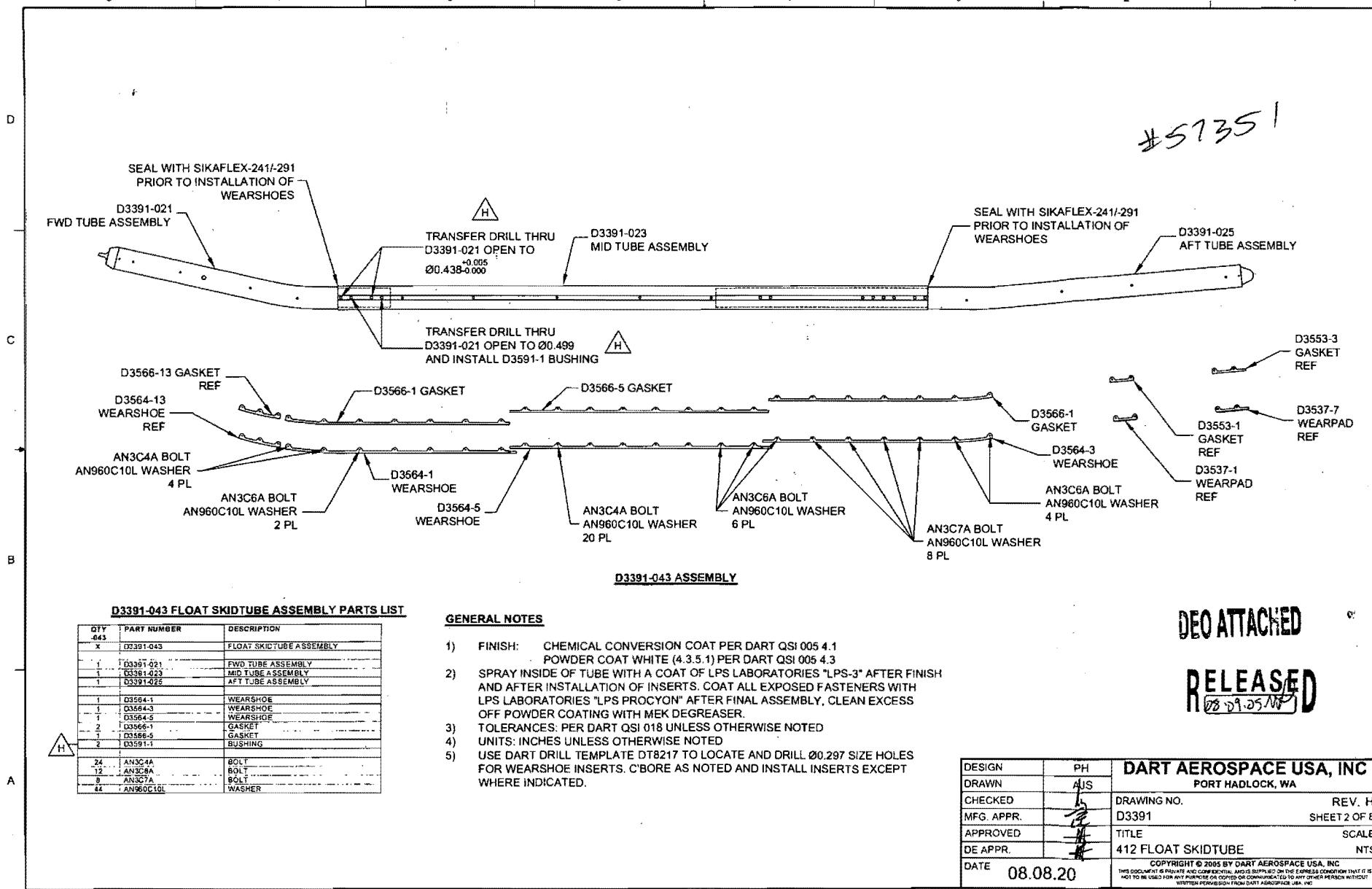
Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

8 7 6 5 4 3 2 1 1



8 7 6 5 4 3 2 1 1

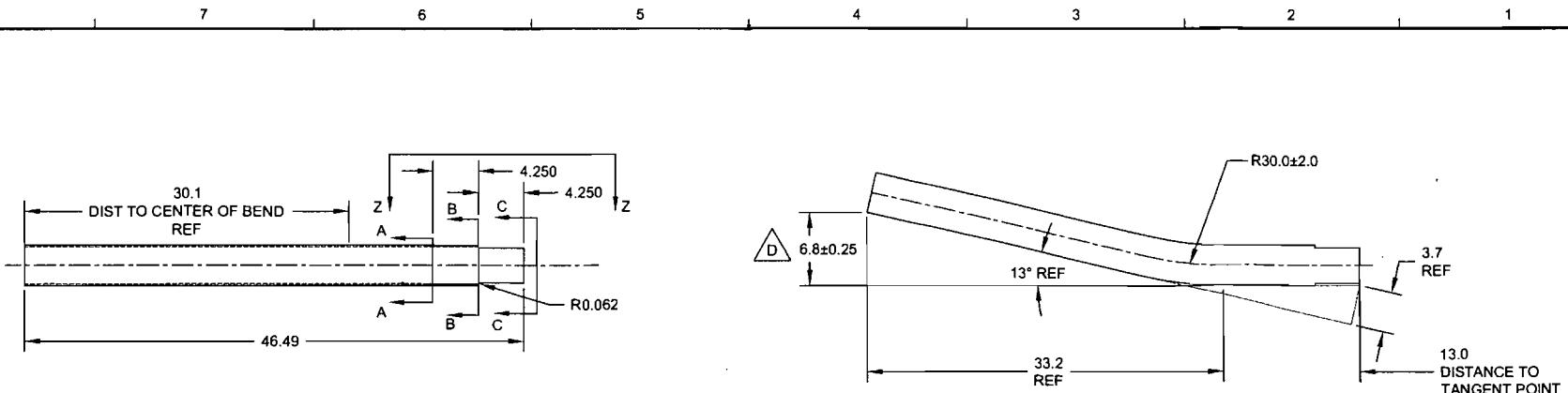
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

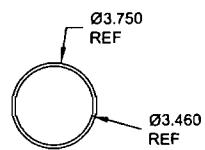
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

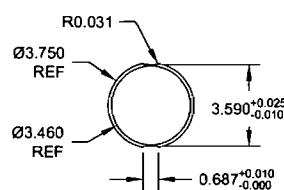


D3391-1 CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)

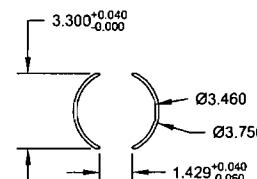
D3391-011-021 BENDING DETAIL
(MAKE FROM D3391-1)



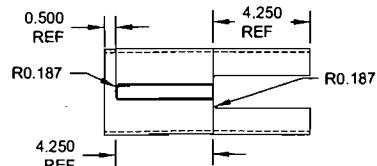
SECTION A-A
SCALE 2X



SECTION B-B
SCALE 2X



SECTION C-C
SCALE 2X



VIEW Z-Z
SCALE 2X

#57361

DETACHED

RELEASED
(09.05.11)

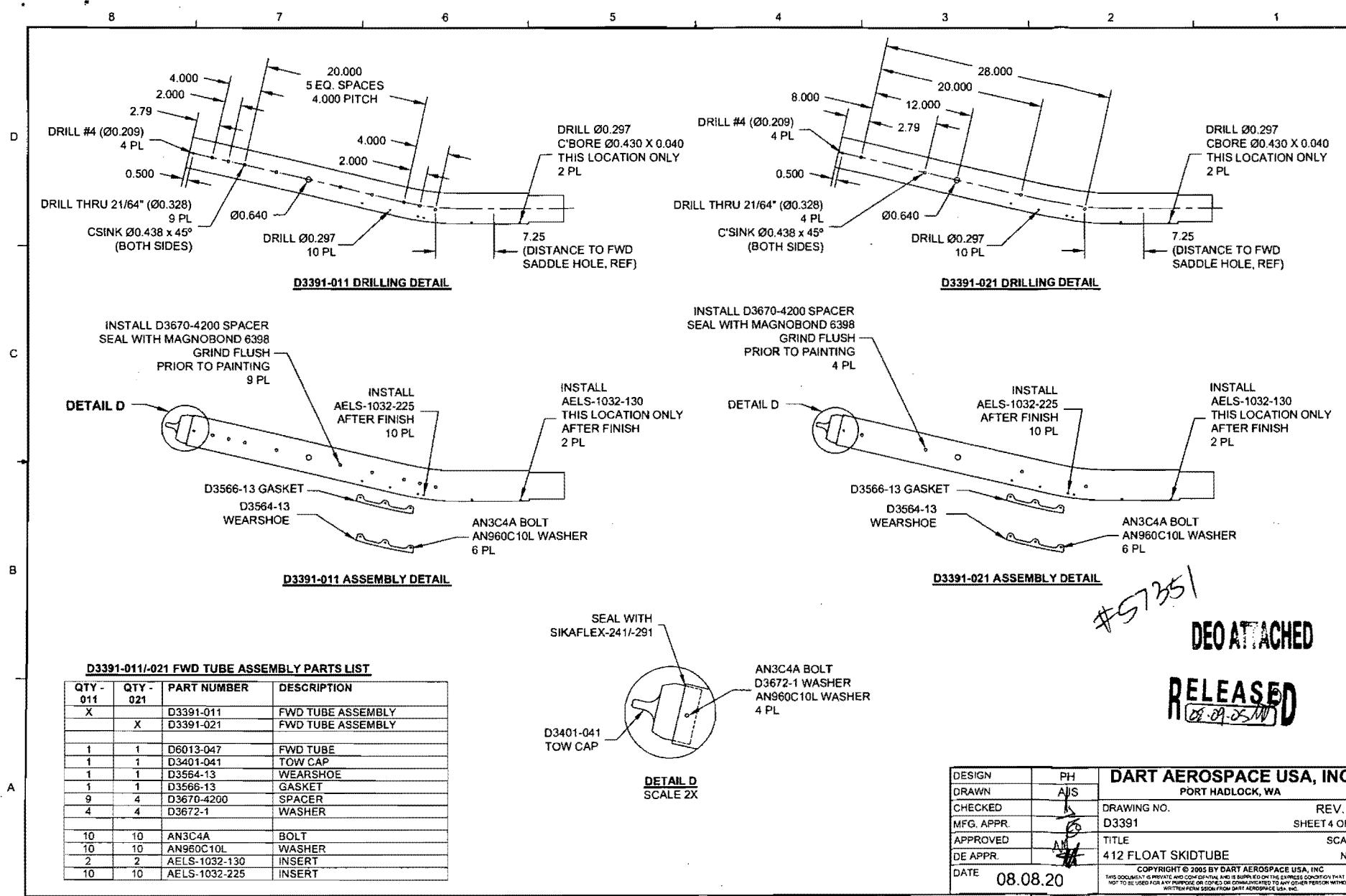
DESIGN	PH	DART AEROSPACE USA, INC
DRAWN	AUS	PORT HADLOCK, WA
CHECKED		DRAWING NO.
		REV. H
		D3391
		SHEET 3 OF 8
MFG. APPR.		TITLE
		SCALE
APPROVED		412 FLOAT SKIDTUBE
DE APPR.		NTS
DATE	08.08.20	COPYRIGHT © 2008 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PROPRIETARY AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

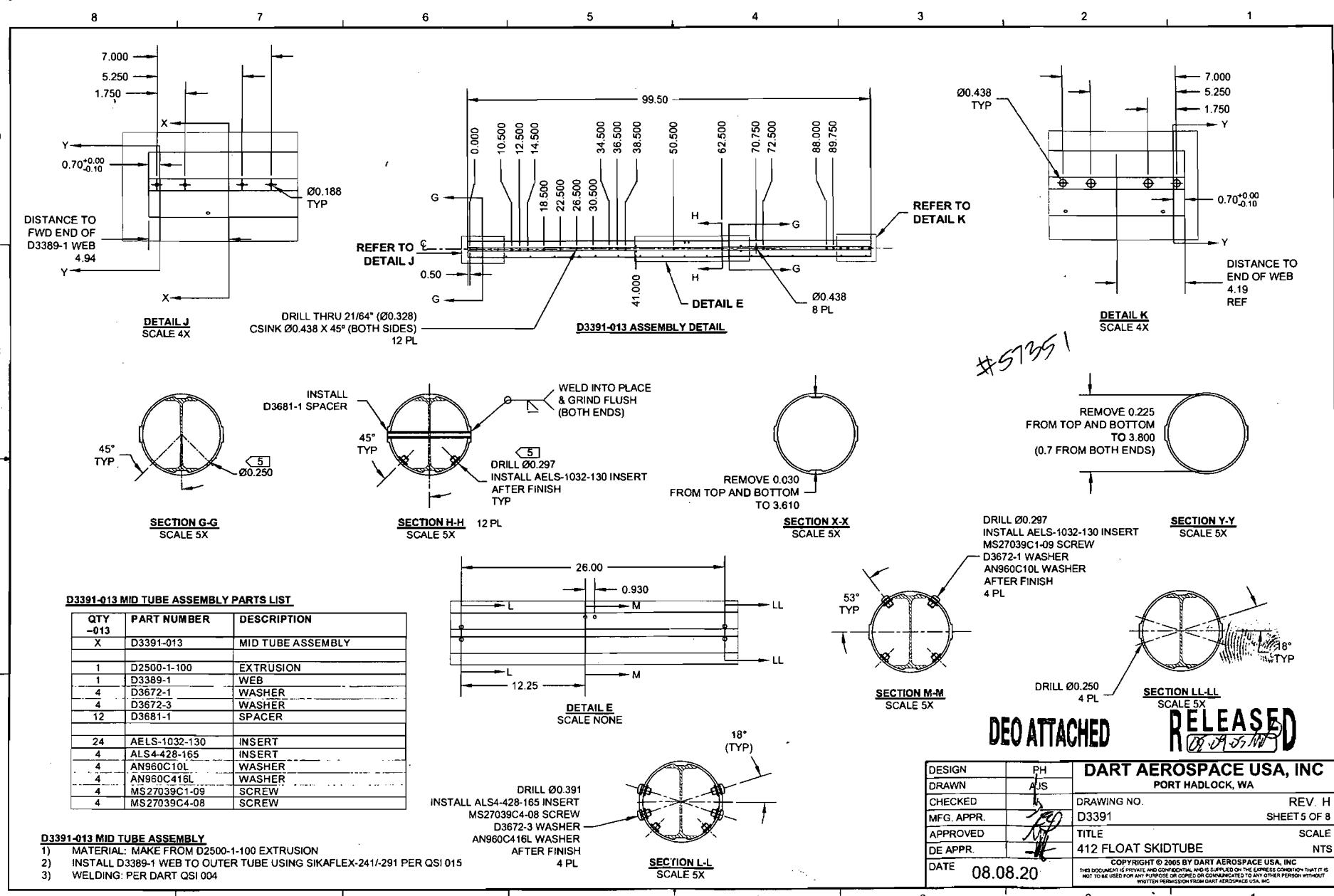


W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



DEO ATTACHED

SCALE 1A
RELEASED

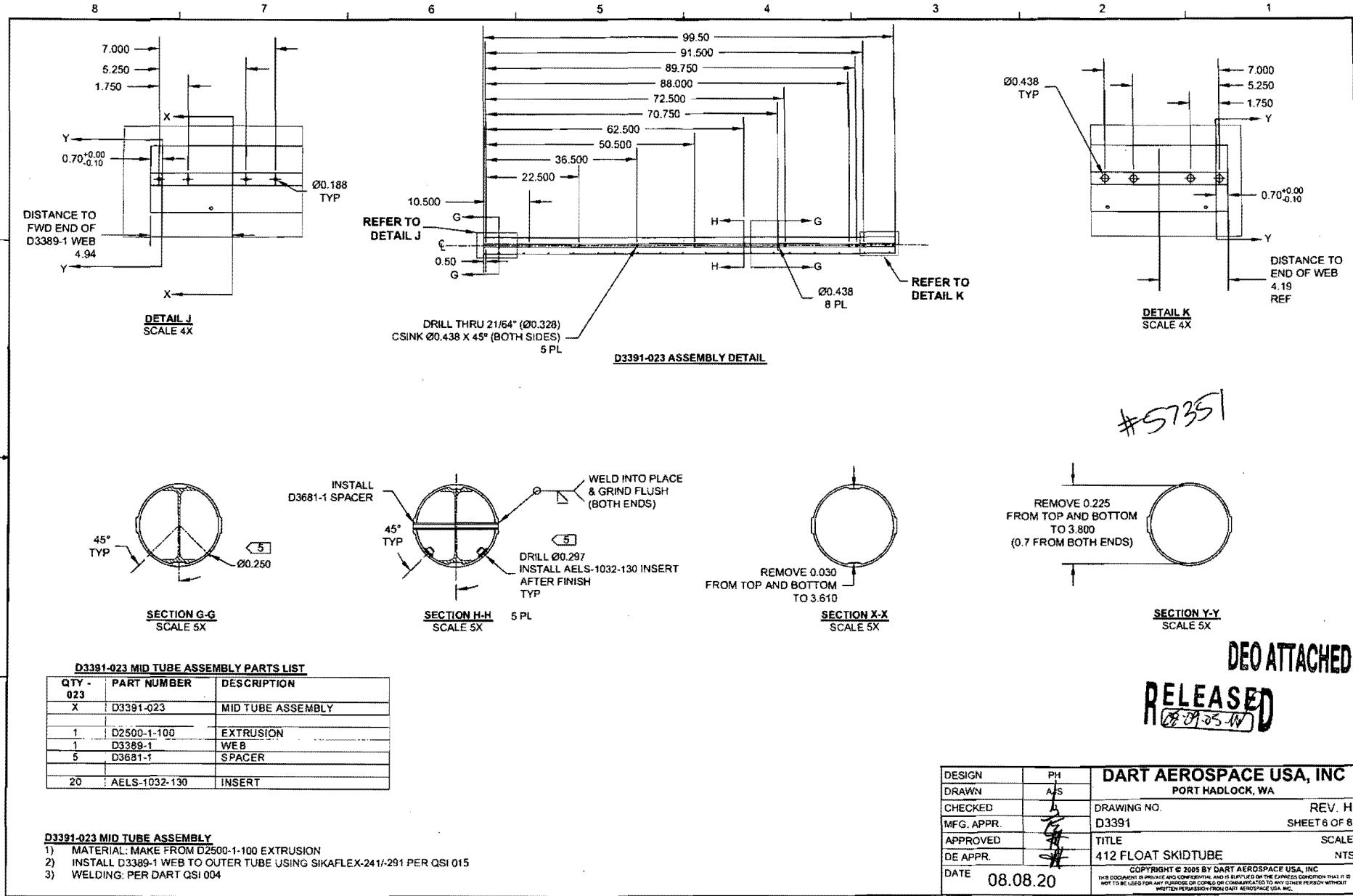
DESIGN	PH	DART AEROSPACE USA, INC		
DRAWN	AJS	PORT HADLOCK, WA		
CHECKED	<i>JK</i>	DRAWING NO.	REV. H	
MFG. APPR.	<i>JK</i>	D3391	SHEET 5 OF 8	
APPROVED	<i>JK</i>	TITLE	SCALE	
DE APPR.	<i>JK</i>	412 FLOAT SKIDTUBE	NTS	
DATE	08.08.20	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC		
THE INFORMATION CONTAINED HEREIN IS UNPUBLISHED PROPRIETARY INFORMATION NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT THE EXPRESS WRITTEN CONSENT OF DART AEROSPACE USA, INC.				

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



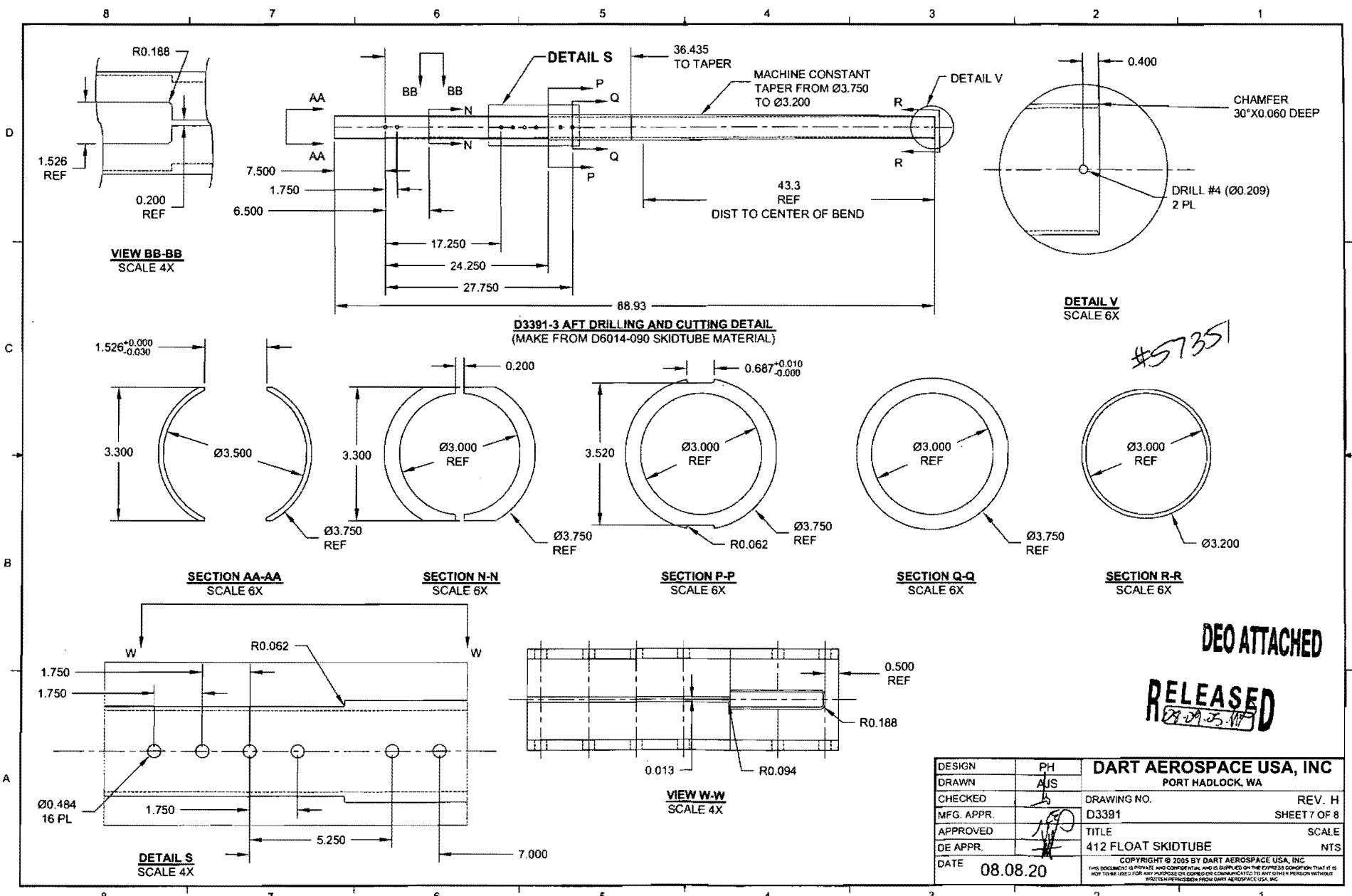
W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DRAWING NO. D3391	TITLE 412 FLOAT SKIDTUBE	REV. H	DART AEROSPACE USA, INC ENGINEERING ORDER	D.E.O. NO. D3391-H-1	SHEET NO. SHEET 1 OF 1	SCALE NTS
DRAWN <i>AP</i>	CHECKED <i>1</i>	MFG. APPR. <i>AA</i>	APPROVED <i>MP</i>	DE APPR. <i>MP</i>		
DATE 09/09/23	DATE 09/09/24	DATE 09/09/25	DATE 09/09/30	DATE 09/09/30	DATE 09/09/30	

PURPOSE:

LPS-3 IS NO LONGER USED DURING ASSEMBLY OF D3391-041/043 SKIDTUBES.

CHANGE:

AMEND NOTE 2 OF D3391-041/043 SKIDTUBE ASSEMBLIES (ZN A6-1, A6-2) AS FOLLOWS:

2) ~~SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH
AND AFTER INSTALLATION OF INSERTS.~~ COAT ALL EXPOSED FASTENERS WITH
LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS
OFF POWDER COATING WITH MEK DEGREASER.

RELEASED
2010-02-02

MP

#5735

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

NO. 4250

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job number: 62679
Part number: A3391-023
Description: 3391
Welding Process: Tig Mig
Base materiel:
Current: AC DC

TEST REQUIREMENTS AND RESULTS

Visual: pass fail
Penetration: pass fail

UNACCEPTABLE

Cracks: pass fail
Undercut: pass fail
Pin holes: pass fail
Overlap (cold lap) pass fail
Porosity (surface): pass fail
Coloration: pass fail

Qualifier J. Edwards Date of Test Coupon 11-04-28

Welder Barclay Elliott Date of Test Coupon 11-04-28

The above named individual is qualified in accordance with AWS D17.1.2001 to weld

